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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,232	10/31/2003	Emily F. Hamilton	12912/1	2295

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EXAMINER	
FLORY, CHRISTOPHER A	
ART UNIT	**PAPER NUMBER**
3762	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/698,232	HAMILTON ET AL.	
	Examiner	Art Unit	
	Christopher A. Flory	3762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 November 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-50* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 November 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed 2 November 2006 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure and claims. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the phrase "wherien the bounded area for each segment has a *respective length* ***determined on a basis*** *of at least one characteristic of the respective portion of the heart rate signal*" constitutes new matter. It involves an active processing step correlating two variables that were not processed or compared in the original specification and claims.

Applicant is required to cancel the new matter in the reply to this Office Action.

2. The declaration filed on 2 November 2006 under 37 CFR 1.131 is sufficient to overcome the Hamilton et al. (US 2003/0208218) reference.

Drawings

3. The drawings were received on 2 November 2006. These drawings are acceptable.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3-5, 7-17, 18-20, 23-30, 32, 49 and 50 stand rejected under 35 U.S.C. 102(b) as being anticipated by Frank et al. (US 5,042,499, hereinafter Frank'499).

In reference to claims 1 & 17, Frank'499 discloses a method for segmenting a heart rate signal to identify heart rate feature events comprising of receiving a heart rate signal including a sequence of sample points (see column 1, lead lines 26-31 & column 4, lead lines 24-34) and the use of a processing unit for processing the heart rate signal to generate a set of segments (see column 4, lead lines 24-31). Frank'499 also discloses each a segment being formed by enclosing a portion of said heart rate signal in a respective bounded area, the bounded area commencing at a start sample point of said heart rate signal and terminating at an end sample point of said heart rate signal wherein the sample points between said start sample point and end sample point lie within said bounded area (see fig. 8 & column 6, lead lines 40-44). Frank'499 discloses processing the set of segments to generate a plurality of sections, each section being indicative of a heart rate feature and releasing a signal indicative of said plurality of sections (see column 1, lead lines 13-23 & fig. 8). The Frank'499 processor alone performs the function of multiple processing units.

Further regarding claims 1 and 17, for a digital signal, each digital data point of a measured heart rate signal as disclosed in Frank'499 is inherently based on a corresponding portion of the heart rate signal, and further is inherently enclosable in a

bounded area (e.g. the sampling rate of the digital system determines a left and right time boundary for each data point collected). Because each data point is both bounded and corresponds to a portion of the heart rate signal, it can be said that the bounded area length would inherently be based on and associated with some characteristic of that portion of the signal.

In reference to claim 3, 4, 8, 19, & 20, a trapezoid is defined as a quadrilateral with two sides parallel and a parallelogram is defined as a quadrilateral with opposite sides parallel (and therefore opposite angles equal) (see http://mathworld.wolfram.com/Trapezoid.html). The Frank'499 device teaches segmenting the detected heart rate into rectangular partitions (see figs. 8-10), and thus such partitions fit the definition of the trapezoid.

In reference to claims 5 & 20, they are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Frank'499 because the entire heart rate signal is a sampling of an actual heart rate, each segment presented would inherently possess an approximate polynomial number of sample points. If not inherent it would have been obvious to one of ordinary skill in the art to use such an approximation because to reproduce an exact replica of a signal one would have to sample said signal infinitely and the presentation means use to present said signal would have to be capable of presenting said infinite number of sample points.

In reference to claim 7 & 23, Frank'499 discloses segmenting the detected heart rate into rectangular partitions (see figs. 2, 3, & 6B), and thus such partitions fit the definition of the trapezoid. Frank'499 also teaches a method wherein a trapezoid

associated with a given segment of said heart rate signal has a height conditioned at least in part on the basis of the variability of at least part of said heart rate signal (see figs. 8-10).

In reference to claim 8 & 24, Frank'499 discloses having the least part of a heart rate signal enclosed within a trapezoid (see figs. 1 & 8-10).

In reference to claims 9-11 and 25- 27, an individual's heart rate will inherently possess a certain drift and/or excursion dependent upon an individual's activity level and/or health (see column 19, lead lines 65-68 and column 10, lead lines 10-26).

In reference to claim 12 & 28, Frank'499 discloses a method wherein a signal indicative of a plurality of heart rate sections includes a list of labeled sections including a plurality of data elements, each data element being associated with a respective section and including a label component, the label component being indicative of either one of an acceleration event, deceleration event and baseline event (see column 6, lead lines 32-34 & column 23, lead lines 63-65).

In reference to claim 13 & 29, Frank'499 discloses providing a picture of an individual's heart rate continuously, over an extended period of time. To do such one would inherently use a recursive process (see column 1, lead lines 26-31).

In reference to claim 14 & 30, Frank'499 discloses a method wherein said recursive process includes forming a segment of said set of segment by enclosing a portion of said heart rate signal in a bounded area, thereby leaving at least one remaining portion of the heart rate signal, the at least one remaining portion including sample points of the heart rate signal excluded from the enclosed portion. Hamilton et

al. device also teaches recursively repeating the recursive process of forming a segment for said at least one remaining portion of said heart rate signal until a certain condition is met (see figs. 8-10 & column 6, lead lines 32-34 & column 23, lead lines 63-65).

In reference to claims 16 & 32, Frank'499 discloses a method where said heart rate signal is indicative of a fetal heart rate signal (see column 1, lead lines 15-19).

In reference to claims 49 & 50, Frank'499 discloses a fetal monitoring system comprising a sensor for receiving a signal indicative of a fetal heart rate an apparatus suitable for monitoring the condition of a fetus, said apparatus comprising of an input coupled to said sensor for receiving a signal indicative of a fetal heart rate (see abstract). The Frank'499 device teaches a feature detection module coupled to said input, said feature detection module implementing a processing unit adapted for processing the heart rate signal to generate a set of segments, each segment being generated by enclosing a portion of said heart rate signal in a respective bounded area, the bounded area commencing at a start sample point of said heart rate signal and terminating at an end sample point of said heart rate signal, wherein the sample points between said start sample point and end sample point lie within said bounded area (see figs. 8-10 & column 6, lead lines 32-34 & column 23, lead lines 63-65). Frank'499 teaches a processing unit adapted for processing the set of segments to generate a plurality of sections, each section being indicative of a heart rate feature (see figs. 8-10 and column 6, lead lines 32-34 & column 23, lead lines 63-65)° Frank'499 teaches a post processing module coupled to said a feature detection module, said post

processing module being adapted for deriving information on the basis of the heart rate features associated with said set of segments (see fig 1, & column 3, lead lines 11-26). Frank'499 teaches an output for releasing the information derived from the heart rate features associated set of segments (see fig. 1) as well as an output unit coupled to the output for said apparatus, said output unit being suitable for displaying the information derived from the heart rate features associated with said set of segments (see figs.1 & 8-10 and column 6, lead lines 32-34 & column 23, lead lines 63-65).

Further regarding claims 49 and 50, for a digital signal, each digital data point of a measured heart rate signal as disclosed in Frank'499 is inherently based on a corresponding portion of the heart rate signal, and further is inherently enclosable in a bounded area (e.g. the sampling rate of the digital system determines a left and right time boundary for each data point collected). Because each data point is both bounded and corresponds to a portion of the heart rate signal, it can be said that the bounded area length would inherently be based on and associated with some characteristic of that portion of the signal.

6. Claim 1, 15, 17, 19, & 29-31 stand rejected under 35 U.S.C. 102(e) as being anticipated by Cohen (US 5,520,176, hereinafter Cohen'176).

In reference to claims 1, 17, & 19, Cohen'176 discloses a method for segmenting a heart rate signal to identify heart rate feature events comprising of receiving a heart rate signal including a sequence of sample points (see Figs. 3A-H & 4) and the use of a processing unit for processing the heart rate signal to generate a set of segments (see fig. 1). Cohen'176 also discloses each segment being formed by enclosing a portion of

said heart rate signal in a respective bounded area, the bounded area commencing at a start sample point of said heart rate signal and terminating at an end sample point of said heart rate signal wherein the sample points between said start sample point and end sample point lie within said bounded area that can be defined as a trapezoid (figs. 3A-H & 4). Cohen'176 discloses processing the set of segments to generate a plurality of sections, each section being indicative of a heart rate feature and releasing a signal indicative of said plurality of sections (see column 3, lead lines 45-50). The Cohen'176 processor alone performs the function of the claimed multiple processing units.

Further regarding claims 1 and 17, for a digital signal, each digital data point of a measured heart rate signal as disclosed in Cohen'176 is inherently based on a corresponding portion of the heart rate signal, and further is inherently enclosable in a bounded area (e.g. the sampling rate of the digital system determines a left and right time boundary for each data point collected). Because each data point is both bounded and corresponds to a portion of the heart rate signal, it can be said that the bounded area length would inherently be based on and associated with some characteristic of that portion of the signal.

In reference to claim 29, Cohen'176 discloses an apparatus wherein said a processing unit inherently implements a recursive process for generating said set of segments (see figs. 3A-H).

In reference to claim 30, Cohen'176 discloses an apparatus wherein said recursive process includes forming a segment of said set of segments by enclosing a portion of said heart rate signal in a bounded area (see figs. 3A-H, 4, & 5), thereby

leaving at least one remaining portion of the heart rate signal. The at least one remaining portion including sample points of the heart rate signal excluded from the enclosed portion. Cohen'176 also discloses repeating the aforementioned recursive process recursively for said at least one remaining portion of said heart rate signal until a certain condition is met (see figs. 3A-H, 4, & 5).

In reference to claims 15 & 31, Cohen'176 discloses a method wherein a certain condition is met when the at least a portion is below a pre-determined threshold (see column 3, lead lines 43-49 & column 2, lead lines 5-16).

Claim Rejections - 35 USC § 102/103

7. Claims 2 and 18 rejected under 35 U.S.C. 102(e) as anticipated by Cohen'176 or, in the alternative, under 35 U.S.C. 103(a) as obvious over Cohen'176 in view of Jelliffe et al. (US 2003/006090 A1).

Regarding claims 2 and 18, Cohen'176 is considered to disclose the selection of features based on acceleration, deceleration and baseline events (column 9, lines 6-14 and 44-55; claims 11, 12). Alternatively, in the same problem solving area, Jelliffe et al. teaches the selection of events based on acceleration and baseline events, such a selection would inherently provide the user with deceleration events as well (see pp. [0024]). Thus it would have been obvious to one of ordinary skill in the art to combine the aforementioned aspects of the Cohen device with the event capturing methods of the Jelliffe et al. publication it indicate to the user and/or medical practitioner where exactly the possibly problem causing event(s) may occur. It would also have been

obvious to one of ordinary skill in the art to introduce the use of a computer readable medium to allow for the transport of data from one device to another.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 5, 6, 21, 22, 33, 35-40, 45-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frank'499.

In reference to claim 33, Frank'499 discloses a method for segmenting a heart rate signal to identify heart rate feature events comprising of receiving a heart rate signal including a sequence of sample points (see column 1, lead lines 26-31 & column 4, lead lines 24-34) and the use of a processing unit for processing the heart rate signal

to generate a set of segments (see column 4, lead lines 24-31). Frank'499 also discloses each segment being formed by enclosing a portion of said heart rate signal in a respective bounded area, the bounded area commencing at a start sample point of said heart rate signal and terminating at an end sample point of said heart rate signal wherein the sample points between said start sample point and end sample point lie within said bounded area (see fig. 8 & column 6, lead lines 40-44). Frank'499 teaches processing the set of segments to generate a plurality of sections, each section being indicative of a heart rate feature and releasing a signal indicative of said plurality of sections (see column 13-23 & fig. 8). The Frank'499 processor alone performs the function of multiple processing units.

Frank'499 does not explicitly teach placing all of the aforementioned information onto a computer readable storage medium. However it would have been obvious to one of ordinary skill in the art to introduce the use of a computer readable medium to allow for the transport of data from one device to another.

Further regarding claim 33, for a digital signal, each digital data point of a measured heart rate signal as disclosed in Frank'499 is inherently based on a corresponding portion of the heart rate signal, and further is inherently enclosable in a bounded area (e.g. the sampling rate of the digital system determines a left and right time boundary for each data point collected). Because each data point is both bounded and corresponds to a portion of the heart rate signal, it can be said that the bounded area length would inherently be based on and associated with some characteristic of that portion of the signal.

In reference to claims 35, 36, & 39, Frank'499 discloses segmenting the detected heart rate into rectangular partitions (see figs. 2, 3, & 6B), and thus such partitions fit the definition of the trapezoid. Frank'499 also discloses a method wherein a trapezoid associated with a given segment of said heart rate signal has a height conditioned at least in part on the basis of the variability of at least part of said heart rate signal (see figs. 8-10), however Frank'499 does teach bounded area is a trapezoid that can be defined as a parallelogram (see figs. 2, 3, & 6B).

In reference to claims 6, 21, 22, 37, & 38 Frank'499 discloses the invention substantially as claimed, but does not expressly disclose the use of a best-fit line. However in the field of graphical data analysis the use of a best-fit line is quite common and well known in the art.

Thus it would have been obvious to one of ordinary skill in the art to apply a line of best fit to the heart rate data to reveal a trend of some sort. It would have also been obvious to one of ordinary skill in the art to introduce the use of a computer readable medium to allow for the transport of data from one device to another.

In reference to claim 40, Frank'499 discloses having the least part of a heart rate signal enclosed within a trapezoid (see figs. 1 & 8-10).

In reference to claim 45, Frank'499 discloses providing a picture of an individual's heart rate continuously, over an extended period of time. To do such one would inherently use a recursive process (see column 1, lead lines 26-31).

In reference to claim 46, Frank'499 discloses a method wherein said recursive process includes forming a segment of said set of segment by enclosing a portion of

said heart rate signal in a bounded area, thereby leaving at least one remaining portion of the heart rate signal, the at least one remaining portion including sample points of the heart rate signal excluded from the enclosed portion. Hamilton et al. device also teaches recursively repeating the recursive process of forming a segment for said at least one remaining portion of said heart rate signal until a certain condition is met (see figs. 8-10 & column 6, lead lines 32-34 & column 23, lead lines 63-65).

11. Claims 2, 18, 34, 41-44 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frank'499 in view of Jelliffe et al. (US 2003/006090 A1).

Regarding claims 2, 18 and 34, Frank'499 discloses the invention substantially as claimed, but does not expressly disclose the selection of features based on acceleration, deceleration and baseline events. In the same problem solving area, Jelliffe et al. teaches the selection of events based on acceleration and baseline events, such a selection would inherently provide the user with deceleration events as well (see pp. [0024]). Thus it would have been obvious to one of ordinary skill in the art to combine the aforementioned aspects of the Cohen device with the event capturing methods of the Jelliffe et al. publication it indicate to the user and/or medical practitioner where exactly the possibly problem causing event(s) may occur. It would also have been obvious to one of ordinary skill in the art to introduce the use of a computer readable medium to allow for the transport of data from one device to another.

In reference to claims 41-43, an individual's heart rate will inherently possess a certain drift and/or excursion dependent upon an individual's activity level and/or health (see column 19, lead lines 65-68 and column 10, lead lines 10-26).

In reference to claim 48, Frank'499 discloses a method where said heart rate signal is indicative of a fetal heart rate signal (see column 1, lead lines 15-19).

12. Claims 33, 35 and 45-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen'176.

In reference to claims 33, Cohen'176 discloses a method for segmenting a heart rate signal to identify heart rate feature events comprising of receiving a heart rate signal including a sequence of sample points (see Figs. 3 & 4) and the use of a processing unit for processing the heart rate signal to generate a set of segments (see fig. 1). Cohen'176 also discloses each a segment being formed by enclosing a portion of said heart rate signal in a respective bounded area, the bounded area commencing at a start sample point of said heart rate signal and terminating at an end sample point of said heart rate signal wherein the sample points between said start sample point and end sample point lie within said bounded area (figs. 3 & 4). Cohen'176 discloses processing the set of segments to generate a plurality of sections, each section being indicative of a heart rate feature and releasing a signal indicative of said plurality of sections (see column 3, lead lines 45-50). The Cohen'176 processor alone performs the function of the claimed multiple processing units.

Cohen'176 does not explicitly disclose placing all of the aforementioned information onto a computer readable storage medium. However, it would have been obvious to one of ordinary skill in the art to introduce the use of a computer readable medium to allow for the transport of data from one device to another.

Further regarding claim 33, for a digital signal, each digital data point of a measured heart rate signal as disclosed in Cohen'176 is inherently based on a corresponding portion of the heart rate signal, and further is inherently enclosable in a bounded area (e.g. the sampling rate of the digital system determines a left and right time boundary for each data point collected). Because each data point is both bounded and corresponds to a portion of the heart rate signal, it can be said that the bounded area length would inherently be based on and associated with some characteristic of that portion of the signal.

In reference to claim 35, Cohen'176 does not expressly disclose the use of a computer readable storage medium wherein a bounded area associated with a users heart is a trapezoid, however Cohen'176does teach bounded area is a trapezoid that can be defined as a parallelogram (see figs. 3A-D, 4, & 5). Thus it would have been obvious to one of ordinary skill in the art to introduce the use of a computer readable medium to allow for the transport of data from one device to another.

In reference to claim 45, Cohen'176 discloses an apparatus wherein said a processing unit inherently implements a recursive process for generating said set of segments (see figs. 3A-H).

In reference to claim 46, Cohen'176 discloses an apparatus wherein said recursive process includes forming a segment of said set of segments by enclosing a portion of said heart rate signal in a bounded area (see figs. 3A-H, 4, & 5), thereby leaving at least one remaining portion of the heart rate signal. The at least one remaining portion including sample points of the heart rate signal excluded from the

enclosed portion. Cohen'176 also discloses repeating the aforementioned recursive process recursively for said at least one remaining portion of said heart rate signal until a certain condition is met (see figs. 3A-H, 4, & 5).

In reference to claim 47, Cohen'176 discloses a method wherein a certain condition is met when the at least a portion is below a pre-determined threshold (see column 3, lead lines 43-49 & column 2, lead lines 5-16).

13. Claims 34 and 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen'176, or over Cohen'176 in view of Jelliffe et al. (US 2003/006090 A1).

Regarding claims 34 and 44, Cohen'176 is considered to disclose the selection of features based on acceleration, deceleration and baseline events (column 9, lines 6-14 and 44-55; claims 11, 12). Alternatively, the Jelliffe et al. publication teaches the selection of events based on acceleration and baseline events, such a selection would inherently provide the user with deceleration events as well (see pp. [0024]). Thus it would have been obvious to one of ordinary skill in the art to combine the aforementioned aspects of the Cohen device with the event capturing methods of the Jelliffe et al. publication it indicate to the user and/or medical practitioner where exactly the possibly problem causing event(s) may occur. It would also have been obvious to one of ordinary skill in the art to introduce the use of a computer readable medium to allow for the transport of data from one device to another.

In reference to claims 41-43, an individual's heart rate will inherently possess a certain drift and/or excursion dependent upon an individual's activity level and/or health.

Response to Arguments

14. Applicant's arguments, see page 20 under heading "Hamilton et al.", filed 2 November 2006, with respect to the rejection under 35 U.S.C. §102(e) as anticipated by Hamilton et al. have been fully considered and are persuasive. The §102(e) rejection of the claims as anticipated by Hamilton et al. has been withdrawn.

15. Applicant's arguments with respect to claims 1-50 have been considered but are moot in view of the new ground(s) of rejection.

It is noted that for a digital signal, each digital data point of a measured heart rate signal as disclosed in Frank'499 is inherently based on a corresponding portion of the heart rate signal, and further is inherently enclosable in a bounded area (e.g. the sampling rate of the digital system determines a left and right time boundary for each data point collected). Because each data point is both bounded and corresponds to a portion of the heart rate signal, it can be said that the bounded area length would inherently be based on and associated with some characteristic of that portion of the signal.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher A. Flory whose telephone number is (571) 272-6820. The examiner can normally be reached on M - F 8:30 a.m. to 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Sykes can be reached on (571) 272-4955. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher A. Flory

10 April 2007

George Manuel
Primary Examiner